REMARKS

After entry of this amendment, claims 1-29 are pending. In the present Office Action, claims 1-25 were rejected under 35 U.S.C. § 112, second paragraph. Claims 1-25 were rejected under 35 U.S.C. § 102(e) as being anticipated by Lim et al., U.S. Patent No. 6,795,966 ("Lim"). Applicant respectfully traverses these rejections and requests reconsideration.

Art Rejection

Applicants respectfully submit that claims 1-29 recite combinations of features not taught or suggested in the cited art. For example, claim 1 recites a combination of features including: "replicate a checkpoint segment from a first local storage of a first node to at least one other node, wherein the checkpoint segment is stored into the first local storage by an application, and wherein the checkpoint segment comprises a state of the application."

The Office Action asserts that the checkpoint segment is anticipated by the state of the virtual machines that are checkpointed in Lim. However, the checkpoints in Lim are made by the virtual machine monitor, and none of the virtual machine monitor state is included in the virtual machine state. Instead, the virtual machine monitor extracts the state from the virtual machine after interrupting execution of the virtual machine: "At the completion of execution of each processor instruction by the virtual processor, the virtual machine has a total state that includes state information of the virtual processor, of the virtual memory, of the virtual operating system, of each application program, and of each virtual peripheral device. The virtual machine monitor is then used as a checkpointing mechanism a) for interrupting the virtual processor; b) for sensing a checkpoint request for the virtual machine; and c) for generating at least one checkpoint, each checkpoint comprising a list of the total state of the virtual machine corresponding to the respective checkpoint request, at the completion of execution of a respective virtual processor instruction." (Lim, col. 6, lines 40-52). Accordingly, the virtual machine monitor, outside of the virtual machine, interrupts the virtual machine and creates the checkpoint of the virtual machine state, which does not include the state of the virtual machine monitor.

Additionally, claim 1 recites "replicate a checkpoint segment <u>from a first local storage of a first node to at least one other node</u> ...and load a copy of the replicated checkpoint segment <u>from the at least one other node into a second local storage of a second node</u> responsive to a request from the second node to load the copy, wherein the second node is to execute the application." The Office Action relies on the language of Lim's claim 10, in col. 32, lines 44-45, to indicate that the state of the source virtual machine is replicated into secondary virtual machines. Applicant does not disagree that Lim teaches restoring the state of a source virtual machine into another virtual machine. However, Lim does not teach that the checkpoint arrives at the secondary virtual machine in the fashion recited in claim 1: from the first node's local storage to another node, and from that other node to the second node's local storage.

For at least the above stated reasons, Applicant submits that Lim does not anticipate claim 1. Claims 2-12 and 26-27 depend from claim 1 and recite additional combinations of features not taught or suggested in Lim. Given the patentability of claim 1 over Lim, as illustrated above, further comment on claims 2-12 with regard to the rejections of those claims is unnecessary at this time. Nevertheless, Applicant notes that several of the dependent claims are rejected based on portions of Lim that are not part of Lim's system (e.g. especially references to Lim's background). For a reference to anticipate a combination of features, the reference must teach the features <u>arranged as required by the claim</u> (see MPEP 2131, last paragraph, citing *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990). Thus, teachings from Lim's background, which are not part of the system described in Lim's detailed description, fail to anticipate the combination of features recited in a given claim because the rejection of the independent claims relies on the teachings of Lim's system. This issue with the rejection occurs at least for claims 2-5 and 12, as well as similar claims dependent from claim 13.

Claim 13 recites a combination of features including: "an <u>application storing a checkpoint segment</u> of the application's state to a local storage of a first node on which the application is executing; <u>replicating a checkpoint segment from the first local storage</u>

of the first node to at least one other node; and loading a copy of the replicated checkpoint segment from the at least one other node into a second local storage of a second node responsive to a request from the second node to load the copy, wherein the second node is to execute the application." The same features of Lim highlighted above with regard to claim 1 are alleged to anticipate claim 13. Applicants respectfully submit that Lim does not anticipate the above highlighted features of claim 13, either. Accordingly, claim 13 is patentable over Lim. Claims 14-23 and 28-29 depend from claim 13 and recite additional combinations of features not taught or suggested in Lim.

Claim 24 recites a combination of features including: "a first node of the plurality of nodes is configured to replicate a checkpoint segment from a first local storage of the first node to at least one other node of the plurality of nodes, wherein the checkpoint segment is stored into the first local storage by an application executing on the first node, and wherein the checkpoint segment comprises a state of the application, and wherein a second node of the plurality of nodes is configured to load a copy of the replicated checkpoint segment from the at least one other node into a second local storage of the second node responsive to a request to load the copy, wherein the second node is to execute the application." The same features of Lim highlighted above with regard to claim 1 are alleged to anticipate claim 24. Applicants respectfully submit that Lim does not anticipate the above highlighted features of claim 24, either. Accordingly, claim 24 is patentable over Lim. Claims 14-23 and 28-29 depend from claim 13 and recite additional combinations of features not taught or suggested in Lim.

Section 112 Rejection

The Office Action asserts that "a copy of the checkpoint segment" in the independent claims is unclear, specifically stating that it is unclear whether the copy of the checkpoint segment is the same as "replicate a checkpoint segment". Applicant respectfully disagrees with the rejection. The first phrase of claim 1 states that the checkpoint segment is replicated to at least one other node. The second phrase states that a copy of the checkpoint segment is loaded from the other node into a second local storage of a second node. Clearly, a copy of the checkpoint segment from the other node

is provided to the second node. The checkpoint segment is also still stored on the other node, so the checkpoint segment provided to the second node is a copy.

Nevertheless, Applicant has amended claims 1, 13, and 24 to recite a copy of the replicated checkpoint segment (from the other node). Applicant respectfully request that that claims 1, 13, and 24, both originally and as amended, meet the requirements of 35 U.S.C. § 112, second paragraph.

CONCLUSION

Applicants submit the application is in condition for allowance, and an early notice to that effect is requested.

If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5760-13100/LJM.

Respectfully submitted,

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